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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,815	04/01/2004	Koen Jacobus Johannes Maria Zaal	081468-0309012	5302
909	7590	11/22/2005	EXAMINER RUTLEDGE, DELLA J	
PILLSBURY WINTHROP SHAW PITTMAN, LLP P.O. BOX 10500 MCLEAN, VA 22102			ART UNIT 2851	PAPER NUMBER

DATE MAILED: 11/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/814,815

Applicant(s)

MARIA ZAAL ET AL.

Examiner

D. Rutledge

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2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>09/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Declaration

1. An executed combined Declaration and Power of Attorney was received on 16 August 2004.

Drawings

2. The drawings filed 01 April 2004 are acceptable for examination.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
5. Claims 1 – 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsukamoto et al. (US Pat. No. 6,809,802).

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The reference lithographic apparatus, shown in Figs. 8 and 28, having illumination system 403; a support structure 106, 402 to hold the patterning device 103, 402; a substrate table 107, 406 for holding the substrate 100, 402; and a projection system 111, 405.

The burl plate shown in Figs. 11A and 12 have a plurality of burls 301, 310, 311. the plate has the following features:

The burls have a higher density along the periphery than in a medial portion of the plate and the burls are substantially constant in density along the periphery and along the medial portion – Claims 1, 8, 9, 11, 14, 21, 22

The pressure supplied from a port to the peripheral portion of the burl plate can be higher than the medial portion of the plate, see col. 28, lines 30 – 3 – claims 2, 11, 12, 15

The size of the burls (projections) is substantially the same in the periphery as in the medial portion – claims 3, 16

The peripheral is annular and is 5% to 20% of the radius of the substrate (see col.7, lines 43,44) – claims 5, 6, 18, 19

The burl plate has an upstanding wall 312 separating the peripheral portion from the medial portion – claims 7, 20

By having the vacuum pressure and release starting from the medial portion outward one prevents a trapping of air or unwanted air pockets during applying vacuum pressure and enables a safer release of the substrate from vacuum pressure at completion of the operation, therefore one of ordinary skill in the art at the time the invention was made

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would be motivated to use this technique in applying or releasing the vacuum pressure – claims 10, 13

The reference in Figs. 4, 6A and 7A, discloses burls of different sizes along the periphery of the burl plate. Although in the embodiment of Figs. 11A and 12 it appears that the burls are the same size, the reference at least teaches that different size burls may be used and therefore one of ordinary skill in the art would be motivated to use different size burls in a higher density along the periphery to further adjust the attracting force on the substrate – claims 4, 13

The reference differs from the claimed invention in that it is not stated whether the lithographic apparatus is immersion exposure apparatus having a liquid supply system to supply a liquid into a space between the projection system and the substrate 100, 402. An immersion exposure technique improves the resolution of the image projected onto the substrate, this would motivate one of ordinary skill in the art to use such an exposure with the Tsukamoto et al. lithographic apparatus.

6. Claims 1, 3 and 8, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama (JP 10 – 050810).

The abstract discloses an aligner and a burl plate. The aligner is not shown, but would have an illumination system, patterning means and support; projection system; substrate and substrate table; and a port for supplying and removing a gas, as claimed. The abstract discloses that the pitch of the peripheral projections (burls) is higher than the pitch of the projections in the central or medial portion of the plate.

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Conclusion


7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takabayashi (US Pat No. 5,923,408) disclose a burl plate with a different density of burls in different portions of the plate.

Response Data

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. Rutledge whose telephone number is (571) 272-2127. The examiner can normally be reached on Mon - Thurs, 6:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


D. Rutledge
Primary Examiner
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